FIG. 1

PRIOR ART

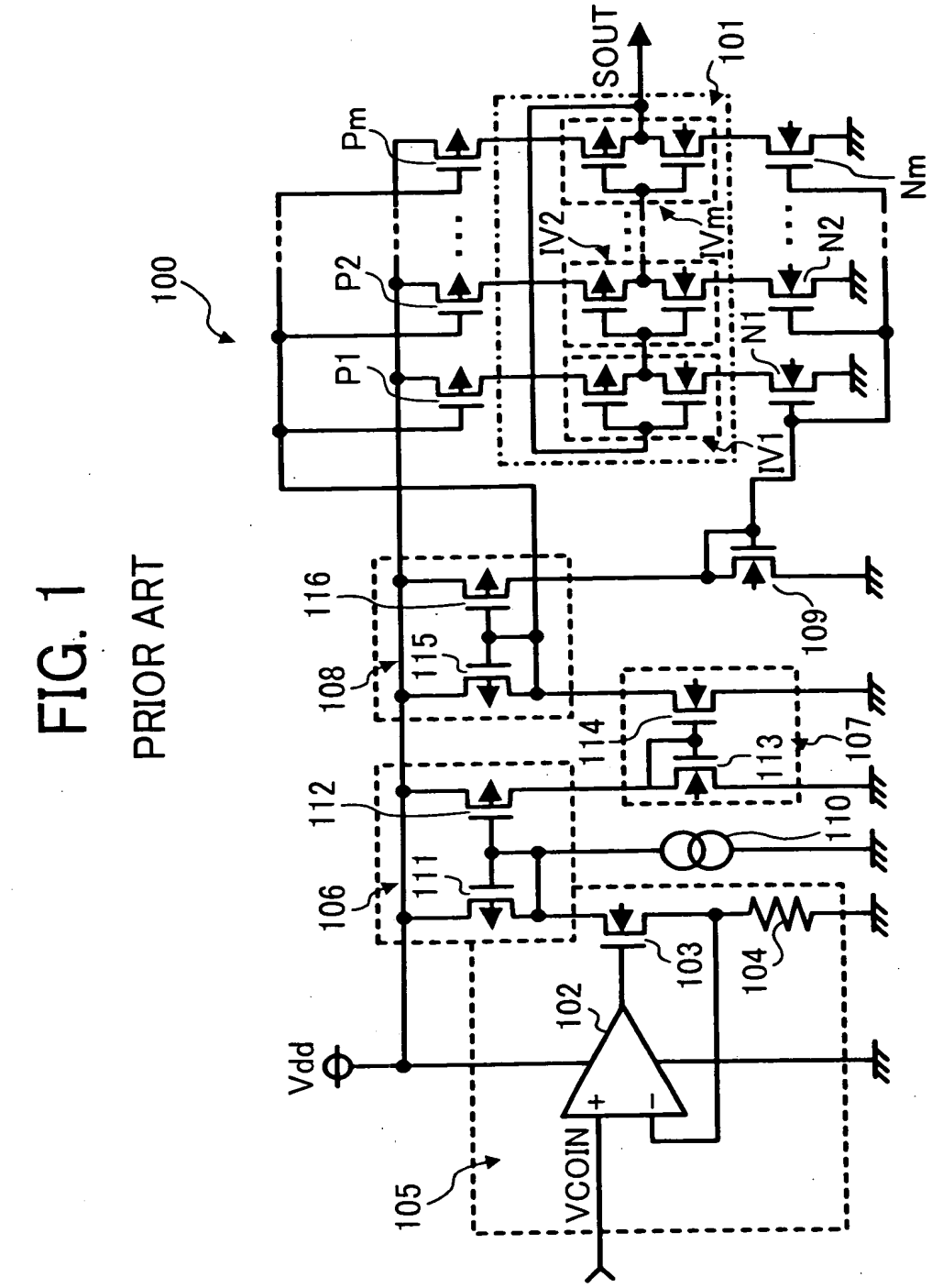


FIG. 2

PRIOR ART

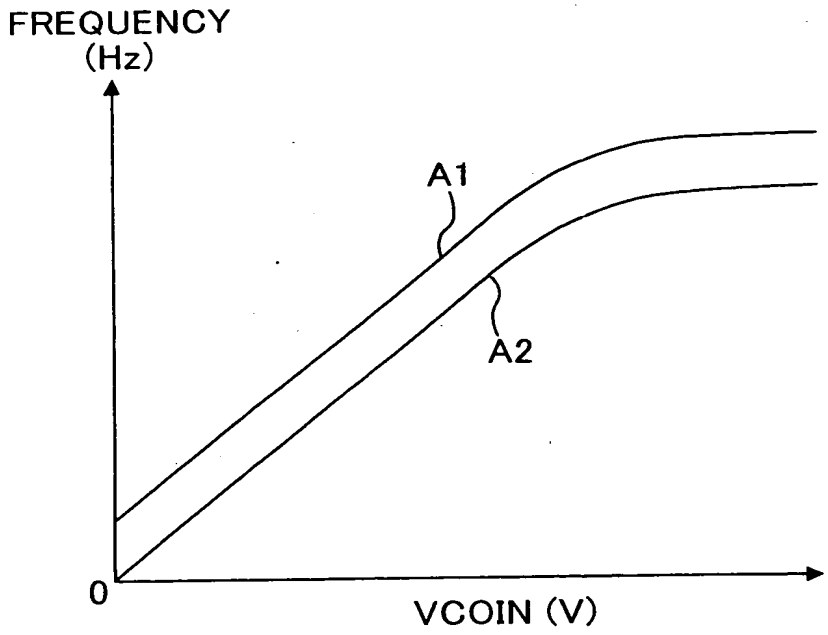


FIG. 3

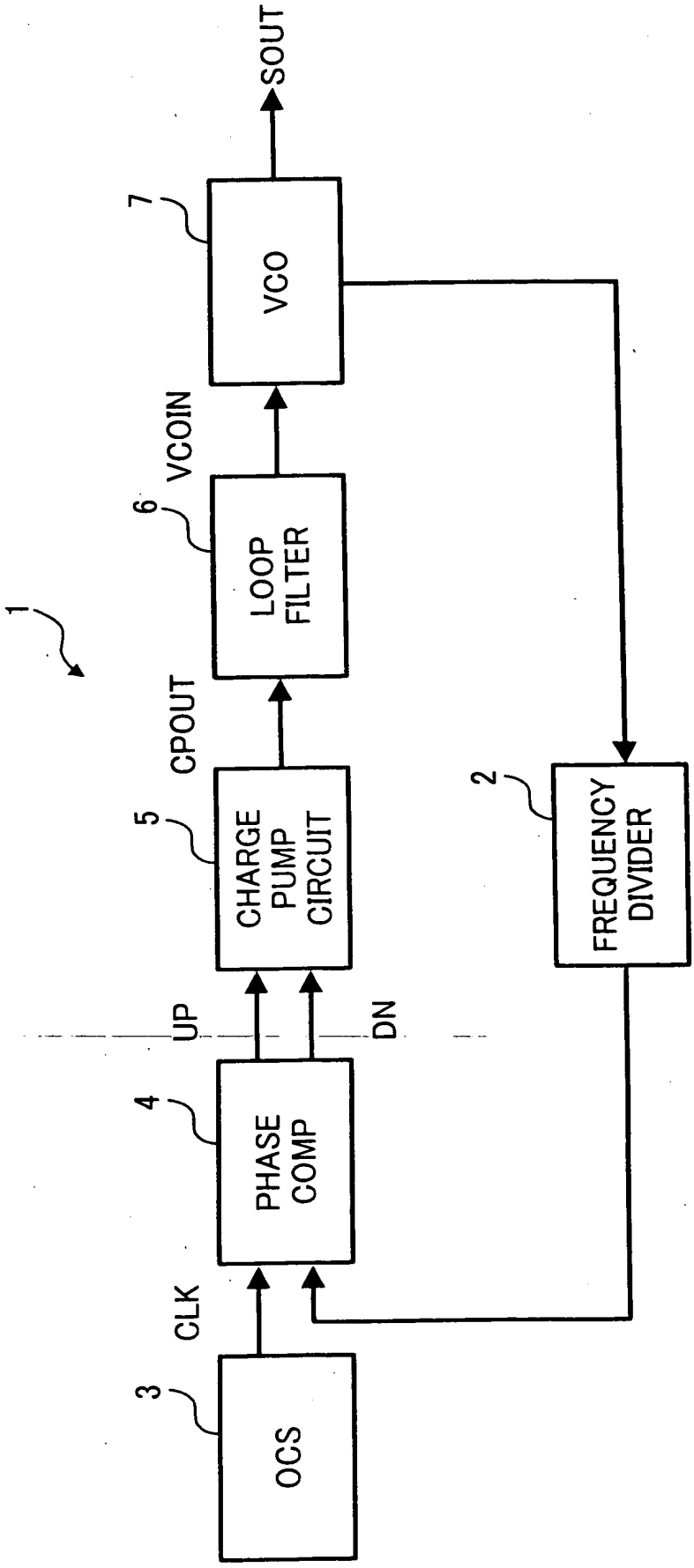

1
2
FREQUENCY DIVIDER
3
OCS
CLK
4
PHASE COMP
UP
DN
5
CHARGE PUMP CIRCUIT
CPOUT
6
LOOP FILTER
VCOIN
7
VCO
SOUT

FIG. 4

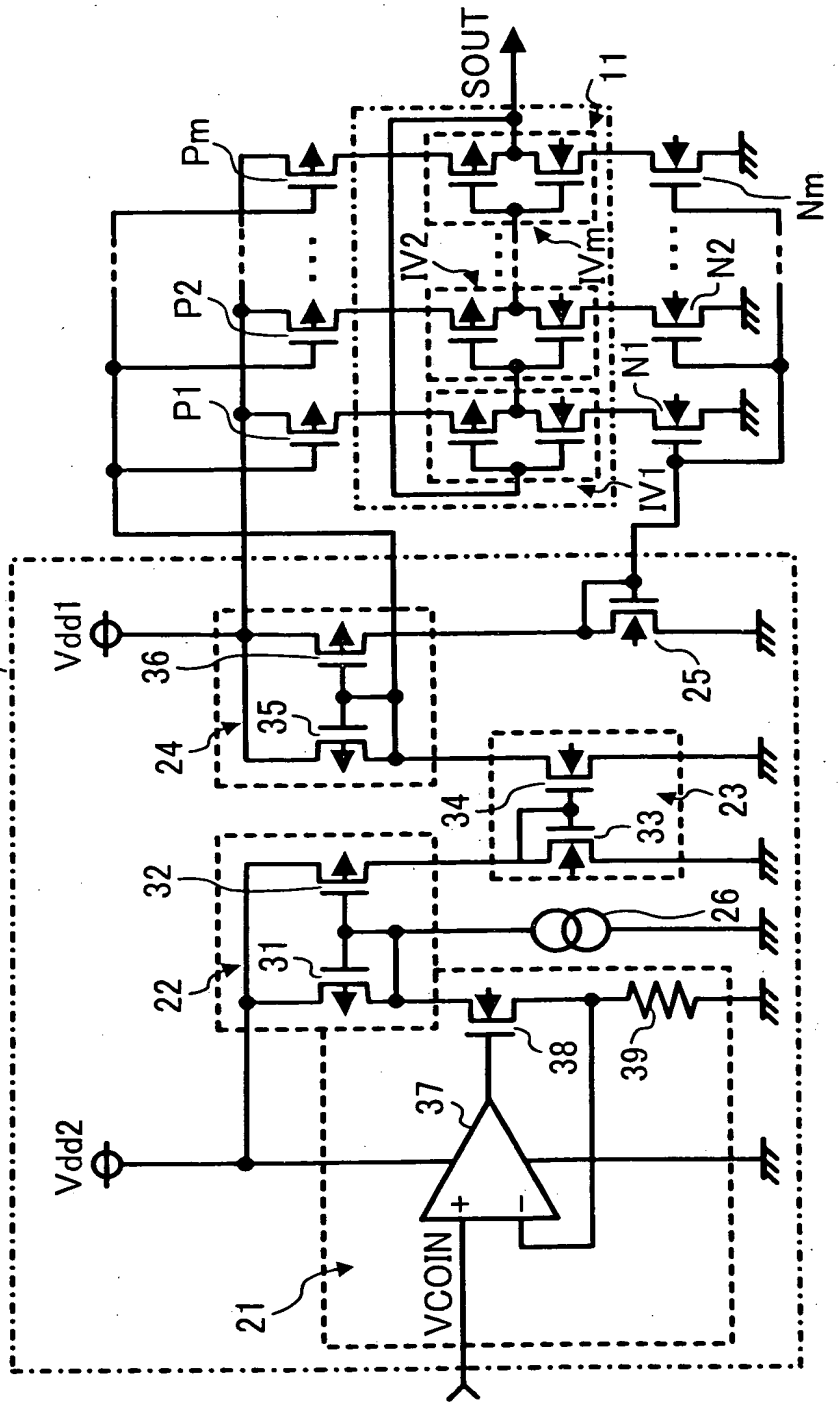

7
12
11
SOUT
Pm
P2
P1
Nm
N2
N1
IV2
IV1
Vm
Vdd1
Vdd2
VCOIN
21
22
23
24
25
26
31
32
33
34
35
36
37
38
39

FIG. 5

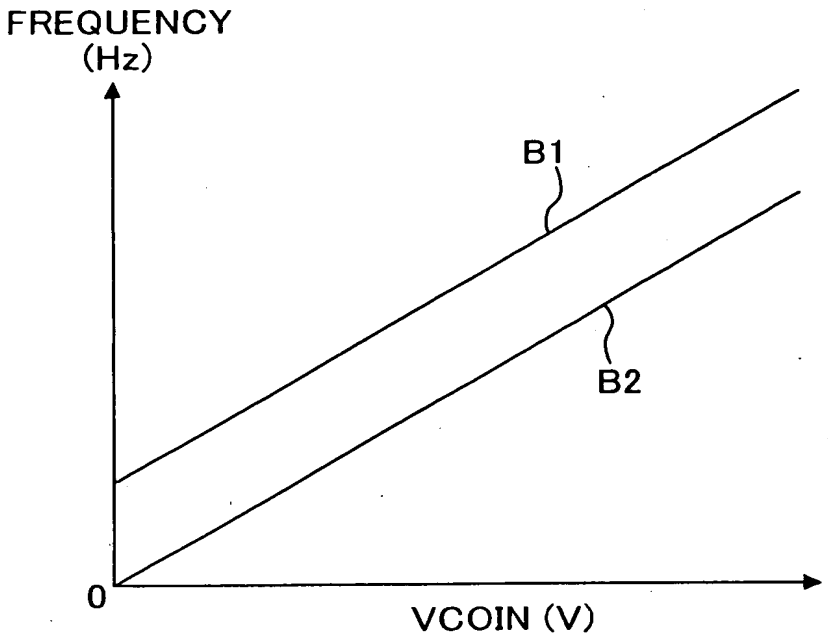


FIG. 6A

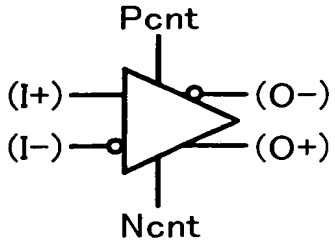


FIG. 6B

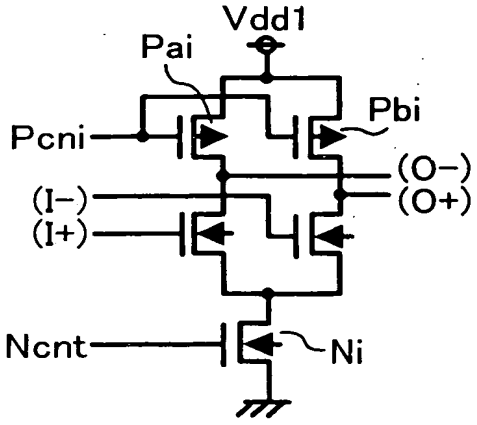
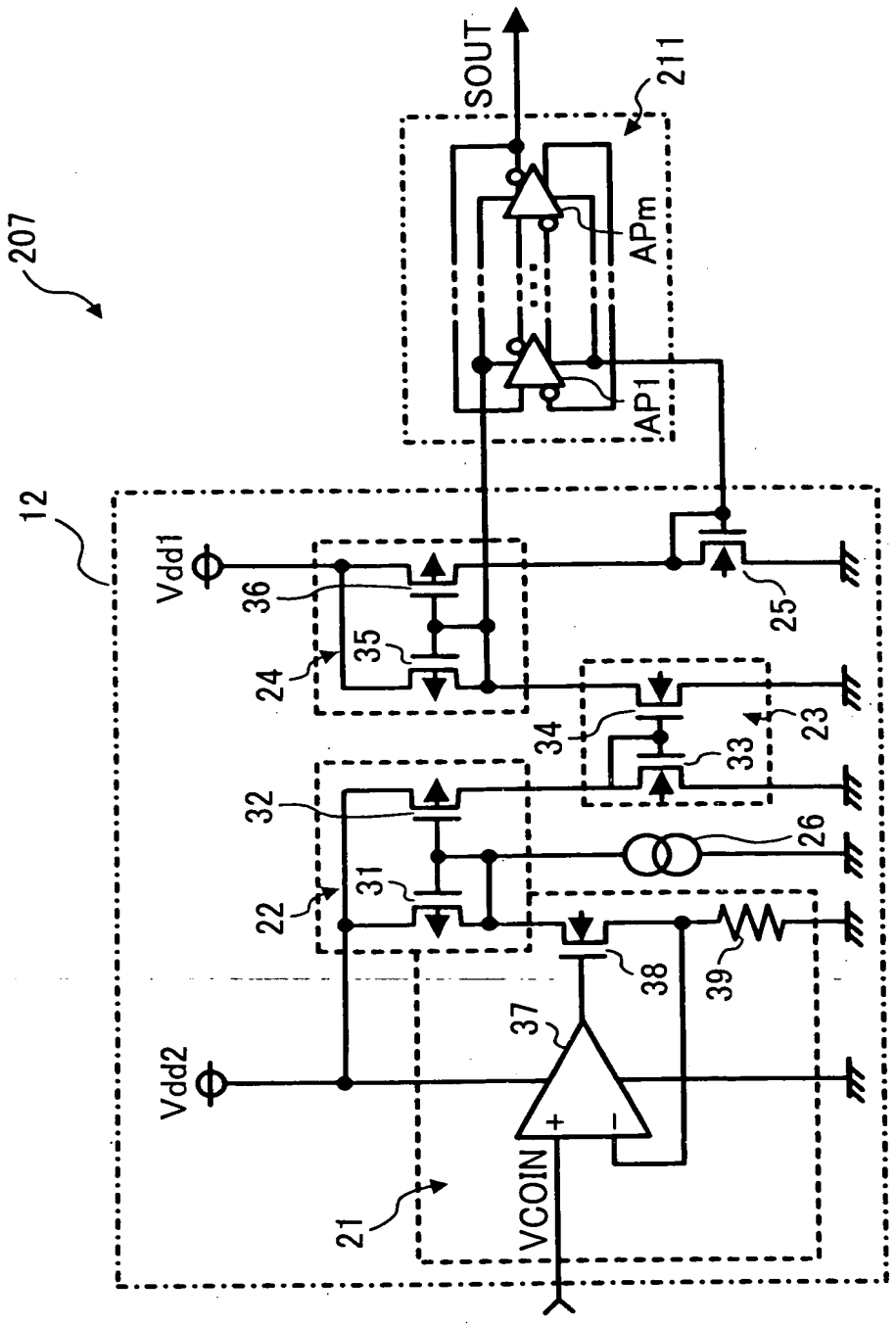


FIG. 7


207
12
SOUT
211
APm
AP1
Vdd1
36
35
24
25
34
33
23
32
26
31
22
38
39
37
Vdd2
VCOIN
21